RS Access, LLC

June 1, 2022

VIA ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

Re: Notice of *Ex Parte* Presentation
Expanding Flexible Use of the 12.2-12.7 GHz Band, WT Docket No. 20-443

On May 27, 2022, V. Noah Campbell, CEO of RS Access, LLC ("RS Access"), Ted Kaplan and David Marshack of RKF Engineering Solutions, LLC ("RKF"), as well as Tom Peters, Trey Hanbury, and Max Staloff of Jenner & Block LLP, met with Simon Banyai, Baron Chan, Peter Daronco, Tim Hilfiger, Lamine Kone, Madelaine Maior, Katarina Mattmuller, Matthew Pearl, Catherine Schroeder, and Blaise Scinto of the Wireless Telecommunications Bureau, Karl Kensinger, Jim Schlichting, and Troy Tanner of the International Bureau, and Bahman Badipour, Michael Ha, and Nicholas Oros of the Office of Engineering and Technology. During the meeting, RS Access reviewed the updated study recently filed by RKF that confirmed its original study's finding that 5G mobile broadband operations and non-geostationary orbit (NGSO) fixed-satellite service can share the 12 GHz band without disruption to either service.

RS Access has now filed two rigorous technical studies based on Monte Carlo simulations of a robust nationwide 5G deployment and 2.5 million NGSO terminals. NGSO operators—including Starlink—have failed to submit any technical analysis of their own during the 1.5 years this proceeding has been open. They have, however, asserted that RKF should have used different satellite design parameters to model satellite operations and which have the general effect of increasing the likelihood of interference. To remove any doubt about the feasibility of 5G-NGSO coexistence, and despite serious questions about the claims made by opposing satellite companies, RKF's new analysis incorporates technical assumptions put forward by Starlink about the nature and operation of NGSO terminals. Although the assumptions advanced by Starlink are contrary to what publicly available data show about how NGSO systems operate in the real world, RKF uses those assumptions and models Starlink terminals that: (i) more frequently use lower elevation angles close to the minimum elevation angle of 25 degrees; (ii) are deployed on rooftops more than half of the time, reflecting greater antenna heights; (iii) use

an unusual antenna gain pattern that makes the terminals more vulnerable to interference.[1] Even after accounting for Starlink's proferred modeling assumptions, however dubious, RKF finds that 5G operations would have no effect on at least 99.85% of NGSO operations in the 12 GHz band. Furthermore because 12.2-12.7 GHz is only a portion of the downlink spectrum available to NGSO operators, the remote (at most 0.15%) probability of interference specifically at the 12.2-12.7 GHz portion, would likely be unnoticable to consumers.

On May 19, 2022, in a meeting with Austin Bonner of Commissioner Starks' office, Starlink primarily regurgitated year-old specious complaints about RKF's original May 2021 study. Those grievances are now shown to be moot and to have no consequence for the feasibility of coexistence in the band. Ironically, May 19, 2022 is the very same day RKF's new study, incorporating Starlink's wish-list of engineering assumptions, was filed with the Commission. As detailed in the accompanying slide presentation and in RKF's latest study, none of Starlink's objections has any merit, and several seem intended to mislead.[2]

RS Access urges the Commission to act swiftly to authorize 5G operations in the 12.2–12.7 GHz band. The engineering record is now complete with respect to the feasibility of 5G-NGSO coexistence, and the Commission has the opportunity for a win/win whereby the 12 GHz band is unlocked for massive 5G opportunities while allowing for NGSO co-existence. The 12 GHz band is well suited for 5G operations, and deploying 5G in the 12 GHz band would deliver meaningful economic and public interest benefits to American consumers without affecting future NGSO services.

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[1] *See, e.g.*, Letter from David Marshack, Managing Director and Chief Operating Officer, RKF Engineering Solutions, LLC to Marlene Dortch, Secretary, Federal Communications Commission, WT Docket No. 20-443 (Aug. 9, 2021), https://bit.ly/3yLRxs7 ("SpaceX's default installation is a ground deployment. The Starlink kit includes no mounting tools beyond a mounting tripod that 'is designed for ground level installation.' Any other type of deployment requires the purchase of additional equipment and, more likely than not, a professional installation to address the cabling and building penetration issues associated with rooftop mounting, including an 'acknowledg[ment of] the potential risks associated with [a roof mount] installation.'….And yet, without providing an affidavit, citation, or any data whatsoever, SpaceX claims that 'most current users install antennas as high as possible (typically rooftop).'") (citations omitted).

[2] Starlink, for example, said RKF should have relied on an unspecified "international consensus" for modeling base station antennas that Starlink does not cite rather than the 3GPP TR 38.820 specification that RKF identified and used. The 3GPP TR 38.820 specification is an approved 3GPP Technical Report detailing, among other things, how to model 5G NR base station antennas for frequencies between 7 and 24 GHz. Starlink's reference to a phantom standard outside of the directly applicable 3GPP Technical Report is all the more remarkable because the 3GPP TR 38.820 specification incorporates an input for the front-to-back ratio that Starlink singles out for criticsm, which RKF set to 30 dB. The benchmark 3GPP TR 38.820 specification applies to each element and, when all elements are calculated, the final pattern has a front-to-back ratio of 30 dB: the gain at 0° is +27.7 dBi, and the gain at 180° is -2.3 dBi. In both its May 2021 and May 2022 report, RKF even went one step further than the 3GPP TR 38.820 specification requires. The 3GPP TR 38.820 Technical Report recognizes that when elements cancel to form nulls, the resulting nulls can be considerably deeper and result in a peak-to-null ratio much larger than the front-to-back ratio. Although 3GPP TR 38.820 does not establish a limit on how deep the nulls can be, RKF capped the nulls at -30 dBi in addition to setting the front-to-back ratio at 30 dB. These measures generated a specific, conservative source for base station performance that Starlink cannot rationally question aside from raising the specter of false consensus at odds with the Technical Reports of the world's preeminent 5G standards body or trotting out banalties that non-specialists can have a difficult time distinguishing from merits-based criticism.

Sincerely,

/s/ V. Noah Campbell

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Attachment

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